AIR WAR COLLEGE

RESEARCH REPORT

AD-A241 082

ANALYSIS OF: A MILITARY LEADERSHIP

ASSESSMENT DEVELOPMENT PROGRAM
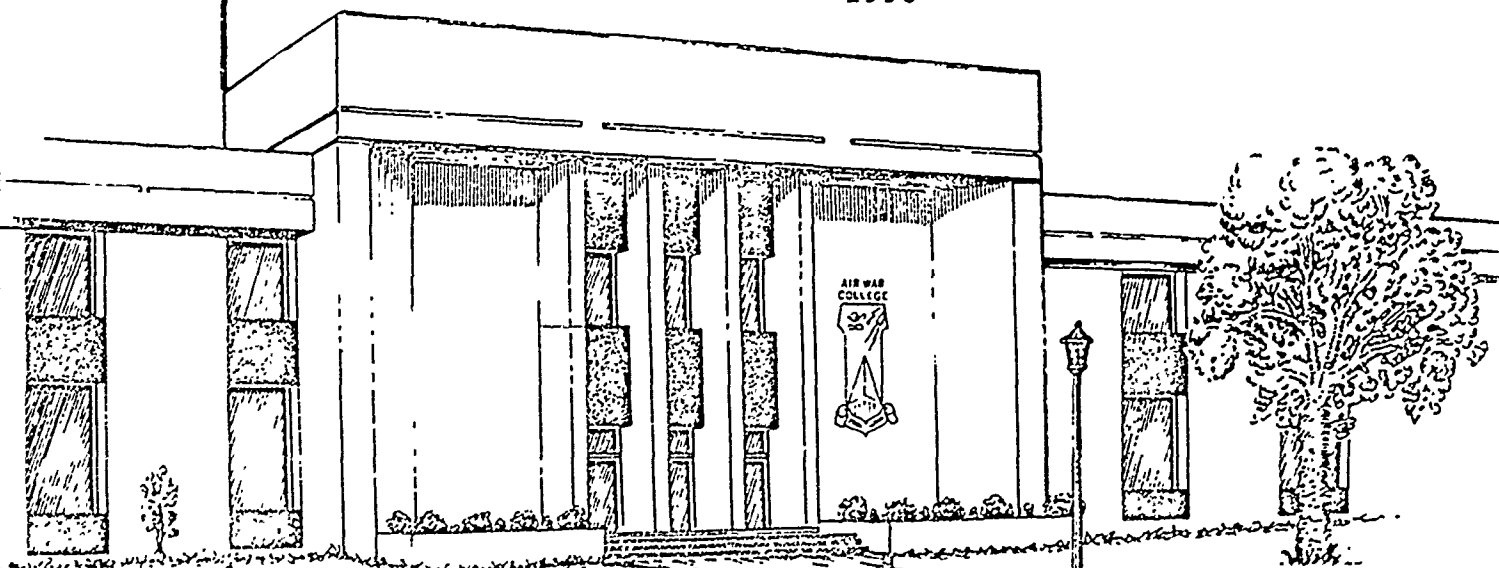
DTIC
SELECTE
OCT.0 4 1991
S
B
D

91-12401

COMMANDER DAVID A. MAWHINNEY, USN

1990

AIR UNIVERSITY
UNITED STATES AIR FORCE
MAXWELL AIR FORCE BASE, ALABAMA

AIR WAR COLLEGE
AIR UNIVERSITY

ANALYSIS OF: A MILITARY LEADERSHIP
ASSESSMENT DEVELOPMENT PROGRAM

by

David A. Mawhinney
Commander, USN

A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE RESEARCH
REQUIREMENT

Research Advisor: Col. Bryan Strickland

MAXWELL AIR FORCE BASE, ALABAMA
MAY, 1990

DISCLAIMER

This study represents the views of the author and does not necessarily reflect the official opinion of the Air War College or the Department of the Air Force. In accordance with Air Force Regulation 110-8, it is not copyrighted but is the property of the United States government.

Loan copies of this document may be obtained through the interlibrary loan desk of Air University Library, Maxwell Air Force Base, Alabama 35112-5564 (telephone: [205] 293-7223 or AUTOVON 875-7223).
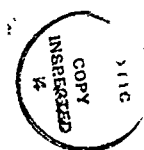
Accession For	
NTIS GRA&I	☑
DTIC TAB	☐
Unannounced	☐
Justification	

By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

ii

EXECUTIVE SUMMARY

TITLE: Analysis of: A Military Leadership Assessment Development
Program.   AUTHOR: David A. Mawhinney, Commander, USN

The Department of Defense has no objective or quantitative
measure of Leadership Ability. With the advances made in the
fields of psychometric testing and assessment over the past
several years, it is this author's opinion that it's now possible
to create a program that would provide an objective, quantitative
measure of leadership ability. Implementation of a program such
as this in the military would provide two positive results.
First, it would provide an individual officer with an objective
ranking of his leadership abilities relative to his peers. It
would also provide him or her with specific information regarding
any weak areas. Armed with this information, each officer would
be able to concentrate his or her efforts on improving that area.

The second positive result from this type of assessment
program is more long range. Under the current evaluation system,
each officer is provided with a periodic subjective evaluation of
his or her performance, including perceived leadership abilities.
These evaluations are used as a basis for job selection and
promotion. A number of jobs and positions in the military
require higher levels of leadership ability, independent duty
assignments, for example. If, in addition to this subjective
evaluation report, an objective measure of each candidate's
leadership abilities were available, selection boards would be
able to make more enlightened decisions.

BIOGRAPHICAL SKETCH

Commander David A. Mawhinney (BS, University of Washington, Seattle, Washington) is currently studying the use of assessments at Troy State University. His assignments in the Navy include Search and Rescue pilot at Naval Air Station Point Mugu, California and Vertical Replenishment pilot operating the H-46 Sea Knight Helicopter from Replenishment Ships in the Atlantic Ocean and Mediterranean Sea. During another tour he served as the flight deck officer on the Aircraft Carrier Midway deploying throughout the Pacific and Indian Oceans. Commander Mawhinney is a graduate of the Air War College, class of 1990 and will hold a Master of Science in Personnel and Human Services from Troy State University.

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION

"The quality of leadership determines the success or failure of an organization." (20:2) This obvious and often stated fact, taken by itself, appears comprehensive enough, but what exactly do the authors mean by leadership? Here, there is no scarcity of opinion. Every author seems to have his or her favorite description. Cusack, in a 1986 article for the _Marine Corps Gazette_, describes Leadership as: loyalty, personal appearance, military presence, and judgment. (13:72) Burns, in his book _Leadership_, describes leadership as "...a process of morality to the degree that leaders engage with followers on the basis of shared motives and values and goals...." (9:36) Bass, in his book _Leadership, Psychology And Organizational Behavior_, refers to leadership as simply, "influence" (2:89), and the list goes on. In fact, "V.J. Bentz listed 130 different definitions of leadership obtained in a sampling of the literature prior to 1949." (2:87)

If this isn't confusing enough, many authors, rather than defining the term leadership, refer to the qualifications required to be a leader. Dobbins, in _Learning to Lead_, lists:

> ...physical and mental health; personal attractiveness; above-average intelligence; superior educational background and experience; clearly defined aims; contagious enthusiasm; perseverance in the face of discouragement; ability to learn and willingness to share; good reputation and integrity of character; devotion to the task and loyalty to the cause."

(16:40)

Smith, in <u>Taking Charge</u> lists twenty key leadership fundamentals including; trust, vision, decisiveness, reliability, dignity, and integrity. (38:3-15)

For the purpose of this study, the definition of leadership provided in the <u>Air Force Handbook</u> will be used. It defines Leadership as: "the art of influencing and directing people to accomplish the mission." (11:14-15) If leadership is an art, do individuals possess leadership ability as they do artistic ability? Is leadership born, or bred, or a combination of the two?

There are numerous ability tests and schools for the burgeoning artist. How about the potential leader? Artistic ability is determined by a variety of widely accepted assessments. Is this possible, or even appropriate for the budding leader? Artistic ability assessments are administered in order to separate students with potential from those without. This culling is done in order to save time and money for both the student and the learning institution. Not everyone has the ability to become another Rembrandt or Picasso.

It is this author's opinion that the same holds true for leaders. Not everyone in uniform has the ability to become a Service Chief. The purpose of this study then, is to propose a means by which the Armed Forces can develop a program that objectively assesses the leadership abilities of its future leaders.

This program would be an ongoing process. Assessment results would be provided to the individual officer as an objective measure of his leadership abilities. Presentation of these results, early on in an individual's career, supported by subjective evaluation reports, would either reinforce positive behavior, or allow time for that individual to take whatever corrective measures needed.

An added benefit of this program might be that if, over time, no improvement is noted, or an individual decides that his goal is not general officer status, he could be channeled into an area of the service where he would be most effective and productive, e.g. as a pilot, remain in the cockpit until retirement with no aspirations toward command. This program then, would provide justification for an alternative approach to the norm, of attempting to groom everyone for general officer rank.

In order to sell a testing program such as the one being proposed by this study, a certain amount of confidence in its validity, desirability and credibility must be created. To accomplish this task, it becomes necessary to take a brief look at the history and development of testing programs.

CHAPTER II

HISTORICAL PERSPECTIVE

<u>TESTING</u>

"Testing is not a new idea, even though the objective
test movement began only at the turn of the century. About 2200
B.C. the Chinese used essay-type examinations to help select
civil service employees." (18:4) Even "...Socrates and Plato
emphasized the importance of assessing an individual's
competencies and aptitudes in vocational selection." (18:4-5)
Down through the ages philosophers and educators have attempted
to devise methods of measuring the intricacies of the human mind.
Initial attempts were to try to find a means to deal with
abnormalities in children. Fitzherbert (1470-1538), one of the
early pioneers, identified items that were used to screen
retarded from nonretarded individuals. (18:4)

One of the first writers to suggest formal testing, Juan
Huarte (1530-1589), did so in his book entitled, <u>The Trial of</u>
<u>Wits. Discovering the Great Differences of Wits Among Men and</u>
<u>What Sorts of Learning Suit Best with Each Genius</u>   Jean Esquirol
(1722-1840) proposed language as the proper testing medium, and
Edouard Seguin (1812-1880) followed up with the first nonverbal
I.Q. measurement.

4

The first physiological/psychological laboratory was established in France by Alfred Binet (1857-1911). His initial work was based on the relationship between intelligence, phrenology and palmistry. His major contribution to the field of psychological testing came in 1896 when he presented a scale that provided a means to determine whether or not a child would be capable of functioning in a regular classroom setting. (18:5)

The first experimental psychological laboratory was founded in Leipzig by Wundt. He was primarily concerned with sensitivity to visual, auditory and other sensory stimuli and simple reaction time. He made his major contribution to testing, however, through the introduction of scientific procedures and rigorously controlled observations. "He influenced the measurement movement by using methodology that required precision, accuracy, order, and reproducibility of data and findings." (18:5)

Like many innovations, psychological testing received a boost through crisis. Both World War One and Two caused a rapid increase in testing requirements Not surprisingly, it was the armed forces that stimulated this rapid expansion. They found that, because of the vast number and accelerated acceptance of new recruits, they were having difficulty placing them properly. The services felt that they needed to find a way of determining the level of mental functioning of these recruits and identify those whose lower intelligence would create problems for the

military. By adapting a group of intelligence tests created by Otis, they developed the Army Alpha test. This test worked well for normal candidates, but because a vast number of recruits were illiterate and an equally large group were foreign-born with only a minimal grasp of the English language, a second assessment was needed. The Army Beta solved the dilemma. It was presented in non-verbal or pictorial form, with pantomimed directions. (18:5)

During WW I the armed services needed to find a way to screen out potential psychotics and other emotionally disturbed individuals. This, requirement for screening, provided the impetus to develop the first personality assessment. It "was developed from the Woodward Personal Data Sheet and is the forerunner to modern adjustment inventories." (18:5)

In 1947, the American Council on Education published a report entitled "Utilizing Human Talent". The purpose of this report was to study the implications of testing in the armed services for civilian education. (14:23-63) "The successful use of tests by the armed services led to widespread use of tests in education and industry." (18:6)

Concurrent with this rapid development of psychometric testing, during the first half of the 20th century, came a proliferation of studies on leadership traits. During this time frame over a hundred studies were conducted In 1948 Stogdill published his assessment of the results of 124 of these studies His initial estimation was that there was some merit to the theory of leader traits, but that the studies conducted up to

that time had failed to adequately support the leadership trait theory as being valid. (46:174-175)

In 1974. Stogdill repeated his research, examining the results of 163 trait studies conducted between 1949 and 1970. He found that

> The research used a greater variety of measurement procedures, including projective tests (e.g.,thematic apperception test, the Miner sentence completion scale). situational tests (e.g.,Ghiselli's self-description inventory. Gordon's survey of interpersonal values). (46:175)

This shift in research methodology, "...led to stronger, more consistent results in the second set of trait studies. Most of the same traits were again found to be related to leader effectiveness and some additional traits and skills were also found to be relevant." (46:175) Individual traits will be discussed further in Chapter IV.

ASSESSMENT CENTERS

Like psychometric testing, assessment center development traces its origins to the beginning of the 20th century. The movement began with the German Army during World War I. They used assessment centers in their officer selection process. Somewhat later, the British War Office and Civil Service Selection Boards began using assessment centers for personnel selection and advancement. (46:3) The Civil Service selection board was established in 1945. It used the assessment center process to assist in picking officers who would eventually be

promoted to the position of Assistant Secretary. (25:5-6)

The Office of Strategic Services (OSS) established the first assessment center in the United States during World War II for the express purpose of training spies. This program proved highly successful. The process lasted for about one week and at the end of that time candidates were either accepted or rejected based on their performance during the assessment program. (45:3)

The first use of assessment centers for the evaluation of management potential was in 1956 by Dr. Douglas Bray at American Telephone and Telegraph (AT&T). His program, known as the Management Progress Study, was used to study the career development of young managers at AT&T. "No doubt this early study has played an important role in establishing the validity of the assessment centre approach, the reported results of the management progress studies confirmed the high predictive power of the assessment techniques to subsequent performance." (26:58) Following on the heels of AT&T's success with assessment centers. Standard Oil of Ohio became the second major corporation to adopt this approach. By 1980 AT&T had established over 50 assessment centers and had formally assessed over 100,000 employees. (45:3) By 1984, over 2500 separate organizations such as IBM, Sears, General Electric, and Caterpillar Tractor were using the assessment center method to select potential managers. (26:58) "Of Fortune magazine's top rated 50 companies in 1976, 42 had assessment centers." (45:3)

Although the initial focus of these centers has been on beginning level or junior management, according to Cox and Beck, in their book Management Development, Advances in Practice and Theory, there appears to be a growing emphasis on using this technique to identify high-level management potential. (26:58)

Unlike her civilian counterparts, the military, after initially introducing the assessment center process to the United States, for some reason abandoned this approach. It wasn't until approximately 1971 that assessment center use was again explored. Even then, the rebirth of military assessment centers had a rather inauspicious beginning. At the Center for Creative Leadership (CCL) in Greensboro, NC., eleven Army battalion commanders participated in the assessment process. Their assessment was followed by the assessment of 12 brigadier generals in 1972. Both were one-time pilot programs and were not continued after receiving poor reviews. In 1974, however, the Army did establish an assessment program for use in its selection of ROTC candidates and recruiters. (44:4)

The Air Force began to explore the feasibility of establishing an assessment center at the Squadron Officers School in 1975. After determination that the assessment center concept would lend itself to use in the Professional Military Education (PME) environment, they established an SOS Assessment Center in 1976. In 1977, the Squadron Officer School created their Leadership Development Program from this assessment center. (45:5)

In 1983, in response to an Air Force Office of Special Investigations (AFOSI) Committee for Development of an Officer Resource Management System report, commonly referred to as the Whiteside Commission, the AFOSI adopted the assessment center concept. AFOSI's assessment center, which is called the Commander Development Center, began its first cycle of operations in March 1986, at the US Air Force Special Investigations Academy, HQ AFOSI, Bolling AFB, DC. (31:2)

The newest military assessment center was opened, by the Army, in September 1988 at their Armor Officer Basic Course. It's called the Leadership Assessment Program (LAP), and is designed to measure 12 dimensions of leadership. (1:39) They are listed in Appendix C.

This brief historical review has shown the how and why of testing and assessment program development. Another important aspect of this process must be explored however, before it is reasonable to expect anyone to develop complete confidence in any testing program. That aspect is its ability to successfully and accurately depict what it purports to. This is addressed in Chapter III.

CHAPTER III

RATIONALE

As E.L. Thorndike, one of the leaders in the world of
psychometric testing, said, "If it exists, it can be measured."
(18:339)

> Measurement pervades all aspects of our lives. Your birth
> certificate lists the date and time of your birth, and your
> birth length and weight-all measured characteristics. Every
> day you encounter measurements: when you receive a score on a
> test, when you price articles in a store, when you select
> clothes, and when you determine the distance you will travel
> on your vacation, to name but a few examples...Educators,
> psychologists, and other behavioral scientists also make
> extensive use of measurements. Their focus, however, is not
> on economic or physical variables. Instead they measure
> abilities, achievements, aptitudes, interests, attitudes,
> values, and personality characteristics. These measurements
> are used for purposes such as planning and evaluating
> instruction, selecting workers and assigning them to jobs
> which match their abilities and interests, placing students
> in courses, counseling and guidance, and studying differences
> between groups and the nature and extent of individual
> differences. Underlying these uses of measurement is the
> belief that accurate information about characteristics of
> individuals is necessary for effective planning, decision
> making, and evaluation. (7:1)

"Businesses and industries have used tests and
inventories to varying degrees for many years, primarily as an
aid in the selection of job candidates." (34:279) "Tests are
often required for selection purposes by state and local
government agencies, also...The military sector makes extensive

use of tests for selection and classification purposes." (18:325)

With all this testing going on, it would seem a simple matter to choose an assessment that would provide the information necessary to determine which leader possesses the most leadership ability; simply give the candidates a test and the highest score gets the position. Unfortunately, it doesn't work that way. Historically, leadership research has attempted to identify a finite set of leadership traits, that if possessed, meant an individual was a leader. This research met with limited success. The problem lay in the researchers' inability to agree on any single trait or group of characteristics that set the leader apart from the members of his group. (28:679) For this reason, "Trait theories have not been seriously considered by leadership researchers since Mann (1959) and Stogdill (1948) reported that no traits consistently differentiated leaders from nonleaders." (30:402)

With all this doom and gloom about testing, then why advocate a testing program for the military? "Leadership research has come a long way from the simple concepts of earlier years that centered on the search for magic leadership traits." (22:32) Leadership has focused on group dynamics, leader/follower interaction, situational response variability etc.. (28:678-683) In many cases researchers are turning to more qualitative evaluation of leadership rather than a purely quantitative approach. (8:14)

Does this mean that quantitative assessments are no longer of value? Bryman and his co-authors in their article, "Qualitative Research and the Study of Leadership," emphasize that they "...are not arguing that a qualitative approach should replace the more conventional emphasis on quantitative methodology." (8:25) Instead they argue that the two methods should be used to complement each other.

Following this argument full circle leads back to Mann's and Stogdill's postulations that trait theories have no validity. According to Lord and his co-authors, in their article, "A Meta-Analysis of the Relation Between Personality Traits and Leadership Perceptions: An Application of Validity Generalization Procedures", "The findings of the Mann and Stogdill reviews have been misinterpreted...." (30:402) Lord et al. state that the interpretation of the study was flawed, and therefore Stogdill's and Mann's conclusions were in error. Lord's study concluded that "...some traits may indeed be important predictors of leadership perceptions...." (30:408)

These results supported a previous study conducted in 1983 by Kenny and Zaccaro. They concluded their research by stating;

> Those who have so strongly endorsed the interactionist theory
> of leadership have done so because they have learned the
> wrong lesson from the failure of past research attempts to
> isolate the leadership trait. This failure should not be
> interpreted as meaning no traits exists but that our research
> and measurement strategies were inadequate. (28:683)

13

In 1974, Stogdill himself refuted the results of his 1948 study. Where, in his 1948 study he stated that the trait factor theory of leadership had not been adequately supported by research, he felt that the different research (1949-1970), had in fact proven the validity of the trait factor theory. (46:175) This shift in opinion resulted largely from the advancements made in psychometric testing and resulted in a greater variety of measurement procedures. In the words of Stogdill:

> The reviews by Bird, Jenkins, and Stogdill have been cited as
> evidence in support of the view that leadership is entirely
> situational in origin and that no personal characteristics
> are predictive of leadership This view seems to
> overemphasize the situational. and underemphasize the
> personal nature of leadership. (46:176)

From the above it can be seen that the controversy over the validity of testing for leadership traits is far from settled. The momentum, however, seems to be shifting back towards the leadership trait theories. With this being the case then, in order to create an effective testing and assessment program it becomes necessary to attempt to identify desired leadership traits. This will be done in the next chapter.

CHAPTER IV

TRAIT IDENTIFICATION

Yogi Bera once said, "if you don't know where you're going, you may wind up someplace else". The same holds true for testing. Prior to commencing a testing procedure, it is necessary to identify the desired outcome. "The identification of men with 'leadership ability' has been an aim and ambition of men throughout recorded history and, no doubt, before." (21:1528) In this study then, the purpose of testing will be to identify leadership ability in individuals. As previously discussed, there are many approaches taken in the evaluation of leadership ability. "Behavioral scientists have attempted to discover what traits, abilities, behaviors, sources of power, or aspects of the situation determine how well a leader is able to influence followers and accomplish group objectives." (46:2) This study will focus on the first approach, trait factor identification.

"For several decades sociologists and psychologists have carried out research on the process of leadership." (43:3) It wasn't until the early 1900's, however, with the rapid development of psychological testing, that they were able to isolate individual leadership traits. Even with the development of psychological testing, researchers remained unable to agree on which specific traits they were searching for.

As discussed in the introduction leadership can mean any number of different things. "As social scientists have learned to probe beneath the manifest aspects of leadership and have become correspondingly more sensitive to the relevance of numerous and complex latent facts, they have found it more difficult to agree on what leadership is and does." (17:3)

Fiedler, in A Theory of Leadership Effectiveness, states that:

> ...most leadership research has pointed to two or three main modes of interpersonal behavior...(a leader) can be autocratic, controlling, managing, directive, and task-oriented...(or) democratic, permissive, nondirective, considerate of his group members' feelings, and therapeutic in his leadership. (19:37)

Brown, in The Human Nature of Organizations lists; confidence, fairness, foresight, wisdom, responsibility, and integrity as fundamental to good leadership. (5:24)

"In questionnaire research on leadership, the most widely used behavior categories have been Consideration and Initiating Structure...." (47:165) Consideration includes items such as; leader supportiveness, friendliness, consideration, communication, representation of subordinate interests, and praise for subordinate achievements. Initiating Structure on the other hand, includes things such as; role clarification, establishing performance goals or standards, directing subordinates. production emphasis, planning, coordination, problem solving. and maintaining control. (47:165) Hunt and Larson, in their book, Crosscurrents in Leadership, propose 11

different leadership ability factors. (47:172-173)

Stogdill's latest attempt at trait identification is found in the following table:

TRAITS	SKILLS
Adaptable to situations	Clever (intelligent)
Alert to social environment	Conceptually skilled
Ambitious and achievement- oriented	Creative
Assertive	Diplomatic and tactful
Cooperative	Fluent in speaking
Decisive	Knowledgeable about group task
Dependable	Organized (administrative
Dominant (desire to influence others)	ability)
Energetic (high activity level)	Persuasive
Persistent	Socially skilled
Self-confident	
Tolerant of stress	
Willing to assume responsibility	(46:176)

From the above it can be seen that even the experts can't agree on what to look for when testing for leadership traits. As this study is designed primarily for military use, the traits exhibited by successful military leaders should also be considered.

Martin Blumenson, author of "Patton: The Man Behind the Legend," states; "A model leader, it turns out, should be endowed with integrity, professional competence, physical, mental and moral courage, the ability to communicate and the like." (4:52) Lt Gen Rosencrans, USAF (ret.), puts it a little differently. He

lists, courage, integrity. vision, motivation, self-control, concern and understanding. (36:7,27) Adm Lawrence USN, says it still differently. He stresses: loyalty, competitiveness, concern, discipline, intelligence, stamina, positive mental attitude, moral courage, and patriotism. (29:41) Finally, Col Myers USMC, simply lists trust, integrity and care. (32:36)

After examining all the leader traits suggested by the aforementioned research, it is the author's opinion that integrity, decisiveness, dominance, intelligence, self-control, energetic, stress tolerance, consideration and confidence would be widely accepted as representative of the results of most studies. These traits, therefore, are the ones that the author would recommend be focused on when determining or developing the assessments to be used in this program. In the following chapters, they will be examined further and validated using available test, inventory and assessment center, data and procedures.

CHAPTER V

AVAILABLE ASSESSMENTS

When evaluating any test, two overriding considerations must constantly be kept in mind. First, one must adopt a skeptical and critical attitude...(asking)...Why were the data collected? Were the proper controls maintained? (and) What do the data mean? The second major consideration is that the test will be used in a particular situation, with a particular group of persons, for a specific purpose. Thus we are looking for the test that will be most appropriate for this particular purpose. (6:451)

There are a number of different types of assessments available for use in individual evaluation. Some of the more prominent categories are: Achievement, Ability/aptitude, Interest, Personality, Career Information, Values, and Intelligence tests.

Although all test types provide valuable information about an individual, in order to focus on identification of leadership traits, only the tests that provide this type of information assessments will be explored.

Personality

Personality as defined by the Random House College dictionary is "the sum total of the physical, mental, emotional, and social characteristics of an individual, (or), the organized pattern of behavioral characteristics of the individual." (40:990) Personality inventories are used to, "...measure

individual differences in social traits, motivational drives and needs, attitudes, and adjustment." (48:87) Caution must be observed when using the results of Personality Inventories by themselves, as they, "...are part of the affective domain and are thus not as valid and reliable as most of the aptitude and achievement tests that make up the cognitive domain." (18:145)

While all personality inventories look at an individual's personality, not all look at it from the some perspective. When attempting to identify a specific trait or factor such as leadership, inventories must be chosen that highlight this particular element. Fortunately, however, there are a number of these available. One of the best currently available is the California Psychological Inventory (CPI). Its focus is "...on diagnosing and understanding interpersonal behavior within normal populations." (18:157) It has a validity median of .50 and a reliability median of .80. It incorporates 18 scales that measure things such as leadership ability, degree of poise, capacity for independent thinking and action, responsibility, dependability. and flexibility among others. (27:168-170) Another available personality inventory is the 16 Personality Factors (16PF). As the name implies, it highlights 16 dimensions of an individual's personality. It has a validity median of .60 and a reliability median of 81. Some of the factors identified are: dominance, emotional stability. enthusiasm, intelligence. imagination, stress tolerance, and self assurance. By combining the individual factors. a second order score is obtained by

computer analysis, that indicates leadership ability. (3:679-680)

While no single test addresses all nine of the leadership traits identified in the previous chapter, both the 16PF and the California Psychological Inventory provide scales that purport to measure the majority of them. In a 1984 study conducted by Karnes, Chauvin and Trant, the 16PF was evaluated to see if it did in fact accurately predict leadership potential. It was administered to 79 Honors College students.

> The data were examined to determine whether individuals who held at least one elected position of leadership obtained Leadership Potential Scores on the 16PF which were different from the scores obtained by individuals who held no such positions. (24:615)

The results of the study were significant. The 16PF clearly differentiated between those in leadership positions and those not, strongly endorsing the 16PF's predictive abilities.

A third personality assessment is the Eysenck Personality Questionnaire (EPQ). Its validity cannot be fully evaluated due to the limited data currently available. It has a reliability median of .80. (41:814-816) It measures extroversion-introversion, neuroticism-stability, and tough mindedness or psychotism. The importance of this assessment is that it demonstrates the incorporation of a Lie scale,

> The authors claim that it can be... (reliably) ...used for clinical diagnosis, educational guidance, occupational counseling, personnel selection and placement, and market research." (18:159)

Career/Maturity/Development

Career Matu. y Inventories "measure the degree of vocational development, vocational attitude, and competence in coping with vocational developmental tasks." (48:120-121) Some are also useful in identifying specific leadership factors or traits.

The Vocational Preference Inventory (VPI) is one such. It evaluates an individual's positive or negative reaction to 160 representative career fields and distributes them as appropriate among 11 predetermined personality dimensions. Some of these are: realistic, enterprising, self-control, social, and acquiescence. (10:1636)

The Self Directed Search (SDS) is another useful assessment tool. It identifies individuals as possessing one of six specific personality types: realistic, investigative, social, enterprising, or conventional. Each of these categories is described by 15 sub-categories. For example, a conventional type would be: careful, inhibited, practical, defensive, efficient, obedient, unimaginative, etc., and an enterprising type would be: ambitious, energetic, self-confident, domineering, sociable, etc.. (10:1019)

Other Assessments

"The most notable, and the most complete, research directed toward the determination of dimensions of leader behavior has been that of the Ohio State Leadership Studies."

(21:1529) The assessment most commonly referred to from these studies, is the Leadership Opinion Questionnaire. It measures nine dimensions of leader behavior, the two most important being consideration and structure.

New tests are constantly being developed in the field of psychometric testing. Two that have just been released are of potential value to this study. They are the Law Enforcement Assessment and Development Report (LEADR) and the Executive Profile Survey (EPS). The LEADR highlights four areas: emotional adjustment, integrity/control, intellectual efficiency, and interpersonal relations. It is to be used to compare an individual's scores with those of a peer group. Users are directed to use the results "...to strengthen and support other parts of their selection process." (23:9)

"The Executive Profile Survey is designed to measure self-attitudes, values, and beliefs of individuals in comparison with over 2,000 top-level executives." (23:18) It assesses 11 dimensions of an individual: ambitious, assertive, enthusiastic, creative, spontaneous, self-focused, considerate, open-minded, relaxed, practical, and systematic traits.

While this chapter has focused on a critical portion of any assessment program, the testing aspect, a complete program must go beyond mere verbal and written inventories. In order to insure this completeness, an individual's performance must also be observed in actual situations and his reactions to them assessed. Thus the evolution of the assessment center process.

The next chapter explains this process and demonstrates how assessment centers can be effectively integrated into a successful leadership assessment program.

CHAPTER VI

ASSESSMENT CENTERS

Assessment centers are generally used for three major functions: promotion, selection, and talent development. (45:5) Unlike most evaluative programs, however, which focus on past performance and successes, the assessment center approach is future oriented. The activities that individual assessees participate in are designed to predict how well they will perform in future positions. (45:4) The process is not only fair, it's unbiased. It has been shown that women and blacks perform equally as well as men and whites in assessment exercises. (45:4) Assessment centers have received positive reviews from more than 70 studies. Most of these were conducted using precise statistical controls. The overwhelming results indicate that assessment centers can accurately predict, with a high degree of validity, future job performance, promotions, and demotions, as well as progress or lack of progress in a career field. (45:4)

The following quote describes the assessment center approach. In it, the author uses the terms manager and leader interchangeably: (46:5)

> The term assessment center refers to a standardized set of
> procedures used to identify managerial potential. Although
> no two programs are exactly alike, they all utilize multiple
> methods of assessing traits and skills, including projective
> tests and situational tests in addition to traditional
> methods like interviews and written tests. Moreover,

candidates for selection or promotion to a managerial
position are usually given some kind of writing exercise
(e.g., a short autobiographical essay) to evaluate their
written communication skills and a speaking exercise to
evaluate their oral communication skills. The assessment
process in the centers typically takes two to three days.
(46:177)

"The traditional purpose of the (assessment) centers was

to select people for eventual promotion because they had high

management potential." (25:43) As discussed above. this is

accomplished through the use of multiple methods of assessing

traits and skills. Some of the more common and representative

methods, involve the use of projective tests such as the Miner

Sentence Completion Scale (MSCS) and the Thematic Apperception

Test (TAT) as well as situational tests such as the in-basket

test and leaderless group discussion. (46:175)

The MSCS measures six areas: positive attitude toward

authority figures, desire to compete with peers, desire to

actively exercise power, desire to be assertive, desire to stand

out from the group, and willingness to carry out routine

administrative work. After more than 33 studies over a period

of 25 years, Miners research indicated that the first three of

these six, closely correlated with successful managerial

advancement. (46:184) Worthy of note, is that these three also

closely relate to three of the traits identified in chapter IV of

this study; consideration, dominance, and decisiveness.

The TAT consists of a series of pictures of people in ambiguous situations. Individuals taking this test are asked to make up stories about each picture. "The stories reveal the person's daydreams, fantasies, and aspirations, and they are coded by the experimenter to obtain a measure of three underlying needs: power, achievement, and affiliation." (46:184) Of these three, the need for power is identified as the most important for managers. "Stories that reveal a person thinks a lot about influencing other people, defeating an opponent or competitor, winning and argument, or attaining a position of greater authority indicate a strong need for power." (46:185)

With the in-basket test, a candidate is presented with an in-basket full of reports, letters, memos, etc. and given only a limited amount of time to process the paperwork, making decisions as required. In the leaderless group discussion, candidates are placed in groups that have no designated leaders and are instructed to represent competing or opposing viewpoints. Each candidate is tasked with persuading the other to adopt his or her viewpoint. "In both exercises, observers rate each candidate on qualities such as initiative, assertiveness, persuasiveness, dominance, and cooperation." (46:177-178)

Factor analysis is as important to the assessment center process, as it is to the testing process. It involves combining several scores to obtain second order scores or factors and is generally done in order to identify a smaller number of distinct traits and skills. (12)

In 1971:

Dunnette reviewed four such studies and found that there was considerable agreement that the following six traits related to managerial success: (1) energy level, (2) organizing and planning skills, (3) interpersonal skills, (4) cognitive skills, (5) work-oriented motivation, and (6) personal control of feelings and resistance to stress. (46:179)

These factors closely relate to five of the leadership traits identified in chapter IV: energetic, consideration, intelligence, self-control (confidence), and stress tolerance, lending further credence to this study's choice of those traits as representative leadership traits.

The preceeding chapters have focused on the history, development and purpose of assessment centers and tests. What remains therefore, is to show how these leadership tools can be effectively integrated into a military leadership assessment program. The next chapter explores that possibility.

CHAPTER VII

MILITARY APPLICATIONS

This study has a twofold purpose. First is to recommend
the establishment of a means of providing each military officer
with an objective input that, when combined with his or her
normal subjective evaluations can either reinforce good
leadership behaviors, or highlight specific areas where
improvement is needed. The second, and most far reaching purpose
is to propose that the armed forces commence a joint research
program designed to either develop new organic leadership
assessments, or tailor existing ones to their needs. Some or all
or the assessments discussed in the previous chapters would be
likely candidates for inclusion in this program. The end result
of this research would be the creation of an objective scale to
be used in evaluating an individual officer's leadership
potential.

With regard to this assessment program, research should
not limit itself to questionnaires, and written tests, although,
as demonstrated earlier in this study, they should be an integral
part of a comprehensive assessment program. Reliance, however,
on these to the exclusion of other research methods such as
direct observation, would engender criticism. (15:238) This
assessment process should be designed to include the assessment

center approach discussed in chapter VI. "Test results constitute only one of a variety of pertinent sources of information...." (34:381) Using written assessments along with the assessment center approach would provide the scientific basis for the objective leadership evaluation program suggested by this study. As stated before, this program would be designed to complement rather than detract from the current evaluation systems.

The assessment centers envisioned by this program need not be service specific. With the current emphasis on joint operations, in fact, it would make more sense, and be more cost effective, to establish them under a joint charter. They would also be structured to do more than just tell a junior officer how he's doing. They would be designed to accommodate progressive advancement. As officers become more senior, leadership requirements change. A program such as this would be designed to assess leadership ability at all levels of seniority. Officers of all services would be required to make periodic visits to these centers, perhaps every 2-4 years. The initial program goal would be to assist leaders in honing their leadership skills, and identifying weakness. With enough study, however, it is theoretically possible that this program could evolve into an integral part of the services' selection process, providing an objective input to what, up to now has been a subjective process.

Instituting a services-wide assessment program such as the one described here would provide objective answers to

questions such as the ones posed by Oldenburg in his article, "Catch 22 In Our Officer Corps;" questions like; "Are today's military officers peg-in-the-hole types unlikely to act independently without their superiors' approval?" (33:24)

Initiating this type of assessment program service wide is not a novel idea. Maj. Slagle called for implementation of a similar program in the January-February 1985 issue of the Air University Review. (37:88-90) In his article titled, "In my opinion," he described the need for an Air Force leadership assessment center. His reasons are no less valid today.

Implementation of this program need not be as painful as it appears. As discussed in Chapter II, prototype programs, already in existence at the Air Force's Squadron Officers School, the Air Force Office of Special Investigations and the Army's Armor Officer Basic Course, could provide the basic blueprint for establishment of Department of Defense-wide assessment centers. (37:90)

Two major areas of concern need to be addressed prior to commencing the research for this project. The first has to do with the designing of personality assessments for use in this program. A number of problems must be considered. Two of the most important are the "the tendency...to distort responses in a particular direction more or less regardless of the content of the stimulus', and the tendency...to answer in such a way as to produce a certain picture of (his or) herself." (18:161) This tendency is commonly referred to as faking. Faking is a major

problem and must be overcome by adequate research. Some

assessments, such as the Eysenck Personality Inventory, discussed

earlier, employ a Lie scale in an attempt to overcome this

inherent difficulty. The 16PF incorporates faking good and

faking bad scales in its attempt. Others, such as the Edwards

Personal Preference Schedule use the forced-choice method.

Whatever the method used, in order to create an accurate

assessment, a primary goal of any developer must be to employ an

effective strategy against faking.

The second major concern is the legal and ethical

responsibilities inherent in any assessment development. Several

laws and court decisions have addressed assessment development

(18:329) For the most part, they are concerned with ones that

show racial, sexual, cultural etc. bias. Assessment developers

for this program will need to be aware of this pitfall, and work

closely with the Judge Advocate General's office .

"Measurement in employment settings is fraught with many

difficulties, some of which are unique to personnel selection.

Unless the organizational support for sound measurement is

obtained, these difficulties will be with us for many years to

come." (42:286) In order for a program, of the magnitude of the

one suggested by this study, to be successful, support will be

needed from all levels of the chain of command throughout the

Department of Defense.

"Shortly after the Battle of the Bulge, Patton Wrote,

Leadership is the thing that wins battles. I have it-but I'll

be damned if I can define it'." (4:53) By instituting the program recommended by this study, it is this author's opinion that the services will have made great strides towards solving Patton's dilemma.

In obtaining the information needed to establish construct validity, the investigator begins by formulating hypotheses about the characteristics of those who have high scores on the test in contrast to those who have low scores. Taken together, such hypotheses form at least a tentative theory about the nature of the construct the test is believed to be measuring." (39:30)

Validity is recorded in the form of a decimal coefficient. A test is considered to have high validity if it has a coefficient of .60 or better. A coefficient of .30 to .60 indicates moderate to good validity. A coefficient of below .30 is considered to be low validity. (12)

Reliability

"Reliability is defined as the degree to which test scores are consistent, dependable, and repeatable." (18:17) Another way to put it is, "the degree to which the results of testing are attributable to systematic sources of variance." (39:48) There are three ways to measure Reliability; Test-Retest, Alternate Forms, and Split-Half Reliability.

Test-Retest means that the same test is given twice with a time period of at least one day and on some occasions, several years between administrations. The scores from the two administrations are then compared and a reliability coefficient is mathematically derived. Test-Retest reliability yields a measure of stability because it is administered over a period of time. This type of reliability is especially important when dealing with aptitude, ability, interest, and personality tests. (18:18)

Alternate Form reliability means exactly what it says. The test is administered using two alternate forms. Because it also measures behavior at two different times, like the Test-Retest reliability, it provides a measure of stability. Additionally, this method provides a coefficient of equivalence between the two test forms. Scholastic aptitude, achievement tests, and general aptitude batteries usually have more than one form. In their case, this is the method most often used to calculate reliability. (18:18)

The third method used to calculate reliability is the Split-half reliability method. This method is used when there is no alternate form available and when multiple administration is impractical. Requiring only one administration, the test is divided into roughly equivalent halves. The scores from each half are then correlated and a coefficient is derived. This coefficient is then adjusted "...using the Spearman-Brown prophecy formula, to get an estimate of what the coefficient would be if the test halves were full length. (18:19)

Reliability is expressed as a decimal coefficient, ranging between 00 and 1.00. A coefficient of reliability of .90 of above is best, from .80 to .90 is good, .70 to .80 is fair, and below 70 is poor reliability. (12)

APPENDIX B

ARMED FORCES INVOLVEMENT IN TESTING

The armed forces have already demonstrated their belief
in the value of testing programs. The officer, as well as the
enlisted procurement programs of each service require the
completion of an ability test as part of the application process.

For the purpose of this study, the terms Aptitude and
Ability are used synonymously. "Aptitude tests measure an
individual's capacity, or potential, for a given skill or task
and are used to predict behavior." (18:105) The most common use
of ability tests is in predicting whether an individual will do
well in a specific educational program, vocational program, or
career field.

While enlisted recruits for all services take the Armed
Services Vocational Aptitude Battery (ASVAB), each service
currently uses its own officer candidate assessment. In the Air
Force, the test is called the Air Force Officer Qualifying Test
(AFOQT). It is comprised of 16 subtests that measure ability in
areas such as verbal analogies, arithmetic reasoning, reading
comprehension etc., up to and including aviation information, and
general science.

The Navy version is called the Aviation Selection Test Battery (ASTB). Despite the name, all officer candidates are required to take this test. It is broken down into four subtests; academic qualification test, mechanical comprehension, spacial apperception, and a biographical inventory.

The Army requires potential officer recruits to take the Officer Service Battery, a general purpose ability battery.

Several other ability tests are also available. Two of the most widely known are the Differential Aptitude Test (DAT), and the General Aptitude Test Battery (GATB). All of these have good reliability in predicting occupational or educational success. (10:1070,490)

APPENDIX C

LEADERSHIP ASSESSMENT PROGRAM (LAP) DIMENSIONS

The 12 dimensions measured by the Army's new Leadership
Assessment program are:

Eight Competencies:

Communication

Planning

Supervision

Teaching and Counseling

Soldier-Team-Development

Decision-Making

Management technology

Professional Ethics

Four Warrior Characteristics:

Iniative

Innovation

Boldness

Flexibility (1:39)

BIBLIOGRAPHY

1. Asbury, Mark E. and White, Jesse. "Reinforcing Leadership In the AOBC Officer." _Armor_, Vol 98, (May-June 1989). pp. 39-41.

2. Bass. Bernard M. _Leadership, Psychology, and Organizational Behavior_. New York: Harper & Brothers, 1960.

3. Bloxom, Bruce M. "Review of 16 Personality Factors." In Oscar K. Buros (Ed.), _Eighth Mental Measurement Yearbook_, pp. 679-680, Highland Park : Buros Institute of Mental Measurement, 1978.

4. Blumenson, Martin. "Troop Command By Intuition: The Giants Had It." _Army_, Vol 37, (December 1987), pp. 52-59.

5. Brown, J. Douglas. _The Human Nature of Organizations_. New York: American Management Associations, 1973.

6. Brown, Frederick G. _Principles of Educational and Psychological Testing, Second Edition_, New York: Holt, Rinehart and Winston, 1976.

7. Brown, Frederick G. _Principles of Educational and Psychological Testing, Third Edition_, New York: Holt, Rinehart and Winston, 1983.

8. Bryman, Alan., Bresnen, Michael., Beardsworth. Alan. and Keil, Teresa. "Qualitative Research and the Study of Leadership." _Human Relations_, Vol 41, Number 1, (January 1988), pp. 13-30.

9. Burns, James M. _Leadership_, New York: Harper & Row, 1978.

10. Buros, Oscar K. _Eighth Mental Measurement Yearbook_, Highland Park : Buros Institute of Mental Measurements, 1978.

11. Carver, Barbara. _Air Force Leadership_, Washington: Department of the Air Force, 1985.

12. Crumpton, Nancy L. _Measurement Concepts_, A lecture presented by Dr. Crumpton at Troy State University in Montgomery, October 2, 1989.

13. Cusack, John R. "A Psychiatrist Looks at Leadership Traits." Marine Corps Gazette, Vol 70, (July 1986). pp. 72-74.

14. Davis. Frederick B. Utilizing Human Talent, Washington, D.C.: American Council on Education, 1947.

15. Davis, Tim R. V. and Luthans, Fred. "Defining and Researching Leadership As a Behavioral Construct: An Idiographic Approach." Journal of Applied Behavioral Science, Vol 20, Number 3, (1984), pp. 237-249.

16. Dobbins, Gaines S. Learning to Lead, Nashville: Broadman Press, 1968

17. Downton, James V. Jr. Rebel Leadership, New York: The Free Press, 1973.

18 Drummond, Robert J Appraisal Procedures for Counselors and Helping Professionals, Columbus: Merrill Publishing Company, 1988.

19. Fiedler, Fred E. A Theory of Leadership Effectiveness, New York: McGraw-Hill, 1967.

20. Fiedler, Fred E., Chemers, Martin M. and Mahar, Linda. Improving Leadership Effectiveness: The Leader Match Concept, New York: John Wiley & Sons, 1977.

21. Gibb, Cecil A. "Review of Leadership Opinion Questionnaire." In Oscar K. Buros (Ed.) Seventh Mental Measurement Yearbook. pp. 1528-1531, Highland Park : Buros Institute of Mental Measurements, 1972.

22. Gordon, Richard F. "Beyond the `Born Leader' Concept." Program Manager, Vol 13, Number 2, (March-April 1984), pp.32-34.

23. Institute for Personality and Ability Testing. IPAT Catalog, Savoy: Institute for Personality and Ability Testing, 1989.

24. Karnes, Frances A.. Chauvin, Jane C. and Trant, Timothy J. "Leadership Profiles as Determined by the 16PF Scores of Honors College Students." Psychological Reports, Vol 55, (October 1984), pp. 615-616.

25. Keil, E. C. Assessment Centers: A Guide for Human Resource Management, Reading: Addison-Wesley Publishing Company, 1981.

26. Kelly, Joe and Ibrahim, A. Bakr. "The Use of Assessment Centre Simulations to Evaluate Decision-making Skills in Selection." In Charles Cox and John Beck (Eds.), Management Development Advances in Practice and Theory, pp. 57-66, New York: John Wiley & Sons, 1984.

27. Kelly, Lowell E. "Review of California Psychological Inventory." In Oscar K. Buros (Ed.), Sixth Mental Measurement Yearbook, pp. 168-170, Highland Park : Buros Institution of Mental Measurements, 1965.

28. Kenny, David A. and Zaccaro, Stephen J. "An Estimate of Variance Due to Traits in Leadership." Journal of Applied Psychology, Vol 68, Number 4, (November 1983), pp. 678-683.

29. Lawrence, William P. "Common Qualities of Good Leaders." Marine Corps Gazette, Vol 65, (April 1981), pp. 40-41.

30. Lord, Robert G., De Vader, Christy L. and Alliger, George M. "A Meta-Analysis of the Relation Between Personality Traits and Leadership Perceptions: An Application of Validity Generalization Procedures." Journal of Applied Psychology, Vol 71, Number 3, (August 1986), pp. 402-409.

31. Minnigerode, Stephen C. The Assessment Center for Leadership Development and Placement: AFOSI'S Commander Development Center, Maxwell Air Force Base: Air University, 1987.

32. Myers, Donald J. "Trust, Integrity, and Care." Marine Corps Gazette, Vol 72, (August 1988), p. 36.

33. Oldenburg. Don. "Catch 22 In Our Officer Corps." American Legion Magazine, (July 1987), pp. 24-25,50-51.

34. Peterson, J. Vincent. and Nisenholz, Bernard. Orientation to Counseling, Boston: Allyn and Bacon, 1987.

35. Rogers, Deborah L., Roach, Bennie W. and Wegner, Toni G. Air Force Officer Qualifying Test Form O: Development And Standardization, Brooks Air Force Base: Air Force Systems Command, 1986.

36. Rosencrans, Evan W. "The Essence of Leadership." Airpower Journal, Vol 11, Number 1, (1988), pp. 6-7,27.

37. Slagle, James H. "In My Opinion, An Old Challenge, A New Dimension: Assessing Leadership Potential In The Air Force." _Air University Review_, Vol 36, Number 2, (January-February 1985), pp. 88-90.

38. Smith, Perry M. _Taking Charge_, Washington, D.C.: National Defense University Press, 1986.

39 _Standards For Educational & Psychological Tests_, Washington, D.C.: American Psychological Association, 1974.

40. Stein, Jess. _The Random House College Dictionary_, New York: Random House, 1982.

41. Tellegen, Auke. "Review of Eysenck Personality Questionnaire." In Oscar K. Buros (Ed.), _Eighth Mental Measurement Yearbook_, pp. 814-816, Highland Park : Buros Institute of Mental Measurements, 1978.

42. Tenopyr, Mary L. "Needed Directions for Measurement in Work Settings." In James V. Mitchell Jr., Barbara S. Plake and Joseph C. Witt (Eds.), _The Future Of Testing_, pp. 269-288, Hillsdale: Lawrence Erlbaum Associates, 1986.

43. Vroom, Victor H. and Yetton, Philip W. _Leadership and Decision-Making_, Pittsburgh: University of Pittsburgh Press, 1973.

44. Witt, William W. _Assessment--An Opportunity_, Cameron Station: Defense Technical Information Center, 1982.

45. Wooten, Randall E _Faculty Guide to SOS Leadership Program_, Maxwell Air Force Base: Air University, 1980.

46. Yukl, Gary A. _Leadership in Organizations_, Englewood Cliffs: Prentice Hall, 1989.

47. Yukl, Gary A. and Nemeroff, Wayne F. "Identification and Measurement of Specific Categories of Leadership Behavior: A Progress Report." In James G. Hunt and Lars L. Larson (Eds.), _Crosscurrents in Leadership_, pp. 164-200, Carbondale: Southern Illinois University Press, 1979.

48. Zunker, Vernon G. _Using Assessment Results in Career Counseling_, Monterey: Brooks/Cole Publishing Company, 1986.